

Selecting Training Methodologies

a contingency approach

John W. Newstrom

Corporate training directors are daily bombarded by a plethora of literature extolling the merits of various training techniques. Nearly two dozen distinctly different methods (and literally hundreds of combinations of them) have become popular at different times. Although some studies have reported the *frequency* of use of various methods, the training literature has failed to produce a clear answer to the question, "Which training method is *most* effective?"

The question, of course, has no simple answer (or at least no consistent answer) for all training directors. Unfortunately, some training personnel act as though they knew the answer and they continue to utilize their "favorite" technique in most of their pro-

grams regardless of its true relevance or adequacy for the objective at hand.

Tradition often locks educators into suboptimal behavior patterns, as evidenced by the widespread use of the lecture technique in our nation's educational system or the strong devotion to the case method at the Harvard Business School. Whenever training techniques are selected on the basis of illogical or irrelevant criteria, we have committed an injustice to our trainees, slowed the movement toward professionalism in the training field, decreased the probability of training program success, and failed to exercise our responsibilities as managers charged with the task of human-resource growth and development.

Why might trainers knowingly

use methods that are either inadequate or inappropriate for the objectives they hope to accomplish? Some possible reasons include the greater cost of alternative methods, the difficulty of revising a total program "at this time," lack of knowledge about the comparative effectiveness of various approaches or even the perception that the trainees (or the trainer's boss) like a certain method best.

It is apparent that the training profession urgently needs an integrated answer to the question of "What technique should I use?" The basis for the answer lies in the emerging area of contingency applications to management. In essence, the contingency approach recognizes that training needs, resources, corporate environments, training climates and the trainees

themselves differ from one situation to the next. It begins by identifying the key variables that define these differences and then develops a framework of responses that are contingently dependent upon the underlying analysis. It

rejects the theory of a universal "one best method" for *all* situations and seeks to identify the training technique(s) most clearly relevant for the unique combination of circumstances.

The contingency model intro-

duced here consists of a series of "If . . . , then" statements placed in matrix form. The "If" elements are the independent variables that describe the conditions under which the trainer must work. The "Then" elements are

Figure 1.

A CONTINGENCY MODEL OF TRAINING METHODS

TRAINING TECHNIQUES:	CONSTRAINTS				LEARNING PRINCIPLES				TRAINING OBJECTIVE		
	COST (Low-High)	TIME (Short-Long)	CLASS SIZE (Small-Large)	OTHER	ACTIVE PARTICIPATION (Low-High)	PRACTICE (Little-Much)	REINFORCEMENT (Seldom-Frequent)	FEEDBACK (Little-Much)	CONCEPTUAL	ATTITUDE	MOTOR SKILLS
Orientation											
Job Inst.											
Apprentice											
Assistant											
Job Rotation											
Junior Board											
Coaching											
Vestibule											
Lecture											
Special Study											
Films											
Television											
Conference											
Case Study											
Role Playing											
Simulation											
Programmed Inst.											
Laboratory Training											

the dependent variables that encompass the array of training methodologies available to the trainer. Although a sample set of both independent and dependent variables will be discussed in the model presented here, it is important to note that each trainer could easily adapt the model to his or her purposes by adding or deleting other components. It is the contingency approach that is emphasized here, not the sophistication of the model in its present stage of development.

Experience suggests that there are many factors to be considered in the selection of a training method, but the most critical independent variables include the nature of the training objective, cost of developing and administering the program, amount of trainee time required, optimum size of class that can be handled and ex-

tent to which principles of learning are inherent in the method (or can be readily incorporated). Others that are not explicitly included in this model are the level of the trainee within the organizational hierarchy, the trainee's educational and cultural background, the training resources available, the qualifications of the trainer, and so forth.

The dependent variable as defined here includes all of the 18 popular training techniques that have been widely discussed over a period of several years.¹ These are orientation, job-instruction training, apprenticeship, assistantship, job rotation, junior board of executives, coaching, vestibule, lecture, special study, films, television, conference and discussion, case study, role-playing, simulation, programmed instruction and laboratory training. (For the sake of brevity, these will not be defined here.)

Each of the five independent variables chosen can be analyzed either according to polar extremes or variability (e.g., high or low; large or small) or with finer degrees of distinction. For ease of presentation, simplified and somewhat arbitrary dichotomy will be used for most of the variables in this model.

Independent Variables

• *Cost* includes the direct expenses that must be incurred in the initial development and each-time administration of the program, such as rental of facilities and special equipment (e.g., films), preparation of booklets and work materials, hiring of outside consultants, and others. The cost can be evaluated on either a total program basis or on a per-trainee criterion, but in either case a decision must be made as to whether it is relatively inexpensive or relatively costly.

• *Training objective* is a simple identification of the three types of learning that can take place — a

change in knowledge, attitude or skill level. Some methods, of course, can be used to attain more than one objective.

• *Time* is the specification of the typical amount of trainee hours / days/months/years that must be devoted to training before the training objective can realistically be attained. For example, films can often be used in very short training programs where the visual presentation and subsequent discussion may require only an hour; apprenticeship training may necessitate several years of trainee involvement.

• *Class size* recognizes the limits placed on some methods because they are only effective if used with a relatively small number of participants (e.g., laboratory or sensitivity training), or else they may require a minimum number of trainees to assure opportunities for interaction. Other techniques, such as the lecture, can appropriately be used for groups up to several hundred in size.

• *Learning principles* have been developed through psychological research and are contained in, or can be applied to, various training methodologies in different degrees. Some of the more commonly recognized principles are active participation of the learner, opportunity for practice, reinforcement of desired behavior and feedback of performance results. Lecture and films, for example, are notorious for their lack of inclusion of most learning principles; programmed instruction was explicitly designed to incorporate several within it.

Figure 1 summarizes the previous discussion of this contingency training model.² The trainer must diagnose the situation by examining each of the five (or more) independent variables and determining their value and implications. It should be noted that most of the variables are of the "go, no-go" type; that is, if a trainer deter-

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mines that he or she has limited economic resources for a program, that decision automatically precludes that trainer from using any of the high-cost techniques. Similarly, if the objective is to induce attitude change in a group of employees, none of the methods limited to increasing knowledge or skill are appropriate for consideration.

Applications

The contingency model is potentially useful from at least three standpoints. First, it would be helpful for a trainer to complete the entire matrix in advance of its use, thereby expediting a decision process when later faced with a given set of constraints and a choice among alternative techniques. For example, given the need for a low-cost, long-term, skill-development approach that could be applied to a small number of trainees and has a strong likelihood of success due to the number of learning principles incorporated, the trainer could immediately see the desirability of choosing an apprenticeship program.

Second, completion of the contingency matrix would allow trainers to recognize the relative merits or weaknesses of some of the training methods they already use, thereby encouraging them to follow a more rational choice process in searching for *replacement* techniques.

Third, the analytical process involved in using the model will hopefully encourage trainers to seek productive ways of *improving* the overall rating of a given technique that they (intuitively) prefer and intend to continue using. For example, the disadvantages of using films can be lessened if not minimized by reducing costs through sharing films with other organizations, and by combining film with case study to incorporate more of the vital learning principles.

In essence, the first approach al-

lows trainers to examine their situation and choose the most appropriate technique — a proactive approach. The second encourages them to criticize their training methods based on a consistent and meaningful set of criteria and replace them with better ones — a corrective approach. The third is truly a constructive strategy that is representative of the training profession, a continual search for new and better ways of developing human resources.

Modifications

The contingency model presented here is extremely flexible and can be adapted to fit training needs in four major ways. First, the list of five independent variables may be expanded or shortened, depending on the individual's perception of how many are important to him or her, and how many the trainer can cognitively combine into the model and still have it be meaningful. The advantages of simplicity are unnecessary to enumerate here; too many insightful models have failed to attain wide usage because they were overcomplicated to the point where the user could not meaningfully comprehend the model.

Second, the list of training techniques (the dependent variable) could be lengthened, shortened or modified by including more recent training techniques (e.g., some of the intervention strategies associated with organization development programs).

Third, the independent variables chosen could be refined by allowing them to take any number of *intermediate* values, rather than just the dichotomous ones used in the illustration. That is, the variable "class size" could be divided into the categories of 1-5, 6-15, 16-25, 26-50, and over 50.

Fourth, the model could be further refined by weighting the independent variables according to the relative emphasis that the trainer feels should be placed on the fac-

tors. As an illustration, the learning principles might be weighted as 40 per cent, cost as 30 per cent, time as 20 per cent, and class size as 10 per cent after due consideration has been given to whether a given technique is appropriate for each of the three training objectives (attitude, knowledge or skill).

Conclusion

The training profession has, for too long, been a victim of disorganization, time pressures and myopic viewpoints with regard to the effective application of training methodologies. As a result, trainers have chosen instructional techniques and continued their use over considerable time periods for many inadequate reasons. These problems have severely hampered the effectiveness of some trainers and tarnished the image of the

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training profession in general.

The contingency approach applied to the selection of training methods holds considerable promise for adding objectivity to training decisions and assuring the choice of appropriate training techniques based on rational criteria and thought processes. The contingency model presented here represents a first approximation toward developing a framework for decision-making by trainers that allows them to adapt their strategy to fit their situational needs.

The model requires further re-

finement and field testing before it can acquire the necessary validity to be widely propagated. Eventually, it is hoped, training personnel will learn to *think* situationally without either rigid adherence to narrow old patterns of behavior or being tied down to a formal model of training techniques. **USERSTD**

REFERENCES

1. Bass, Bernard M. and James A. Vaughan, *Training in Industry, the Management of Learning*, Wadsworth, 1966, p. 131.
2. The author wishes to thank Arthur Holden, Robert Miller, John Norris,

and Michael Zody for their valuable assistance in the formulation of the contingency model.

John W. Newstrom is associate professor of management and assistant director of the Bureau of Business and Economic Research at Arizona State University in Tempe. He is active in ASTD, having served as secretary and membership chairman of the Valley of the Sun Chapter. His previous article, "Human Relations Training: New Value from a Malignant Technique," appeared in the April, 1973 issue of the *Training and Development Journal*. He is the coauthor of *A Contingency Approach to Management* (McGraw-Hill).

Letter to the Editor

Non-Collegiate Instruction: Additional Points

Permit me to comment on the two excellent articles dealing with non-collegiate instruction by John J. Sullivan and my good friend Leonard Nadler which appeared in the July '75 issue. I think a few additional points need to be made:

1. The acquisition of college credit by itself, even without a degree, may be seen as a status symbol by individuals participating in non-collegiate type instruction.
2. The process of acquiring accreditation through accreditation bodies is not an easy or simple one. One of the problems which the training organization being evaluated will face is conceding that individuals doing the evaluating may have different objectives and often very different viewpoints than those managing the programs.
3. The acquisition of credit by itself does not ensure that colleges will automatically accept such credit. This, of course, is true whenever one transfers from one institution to another. In the case of credit which was not acquired in a formal collegiate setting, however, this can be more of a problem.

Finally, and perhaps on the other side of the coin, we have to recognize that many colleges are providing the equivalent of credit through an intensive evaluation of the individual making application for a baccalaureate degree. Here, the college provides the equivalent of credit on the basis of an evaluative judgment which is determined by the kinds of learning acquired as a result of acceptable "life experiences."

Sincerely,

Herbert M. Engel
Director of Public Employee Training
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(Editor's Note: For information on the Cooperative Assessment of Experiential Learning (CAEL) project, a research and development effort to improve techniques for assessing out-of-classroom learning, see "Assessing Experiential Learning For College Credit" in the Sept. 15, 1975 issue of ASTD's National Report.)